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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/596,796	06/19/2000	Scott P. Tennican	50002.4USU1	3724

23552 7590 03/31/2004
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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT PAPER NUMBER

2171

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/596,796

Applicant(s)

TENNICAN ET AL.

Examiner

Etienne P LeRoux

Art Unit

2171

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 11-15, 17, 18 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,926,813 issued to Chaudhuri et al (hereafter Chaudhuri) and in view of US Pat No 5,873,075 issued to Cochrane et al (hereafter Cochrane).

Claims 1, 12-14, 17, 21-25:

Chaudhuri discloses:

A method for employing a plurality of data structures types to optimize the retrieval of at least one data object over a network, comprising:

- (a) storing each data object in a data store, each data object in the data store being separately referenced in each of the plurality of data structures [col 5, lines 45-56]
- (b) in response to a request for one data object, automatically determining one of the plurality of data structures best suited to retrieve the one data object and employing the determined data structure to locate and retrieve one data object from the data store [col 10, lines 22-47, col 11, lines 55-65, col 12, lines 50-65]
- (c) in response to a request for a plurality of related data objects, automatically determining another one of the plurality of data structures best suited to retrieve the plurality of related data objects and employing the determined other one of the plurality of data structures to locate and retrieve the plurality of related data objects from the data store[col 10, lines 22-47].

Chaudhuri discloses a server [abstract]

Chaudhuri discloses the elements of claim 1 as noted above.

Art Unit: 2171

Chaudhuri fails to disclose automatically deleting each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful.

Cochrane discloses automatically deleting each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful [col 4, lines 43-58]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chaudhuri to include automatically deleting each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful as taught by Cochrane.

The ordinarily skilled artisan would have been motivated to modify Chaudhuri per the above for the purpose of deleting child records depending from a deleted parent record [col 4, lines 43-58]

Claims 2, 15, 18:

Chaudhuri discloses the elements of claim 1 as noted above.

Chaudhuri fails to disclose associating a parent object with each data object, the parent object identifying each reference for the associated data object in the plurality of data structures.

Cochrane discloses associating a parent object with each data object, the parent object identifying each reference for the associated data object in the plurality of data structures [col 4, lines 1-10]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chaudhuri to include associating a parent object with each data object, the parent object identifying each reference for the associated data object in the plurality of data structures as taught by Cochrane.

The ordinary skilled artisan would have been motivated to modify Chaudhuri per the above for the purpose of establishing a relationship between two tables [col 4, lines 1-10]

Claim 3:

Art Unit: 2171

Chaudhuri discloses wherein the plurality of data objects have at least one related characteristic, including port, IP address and type [abstract]

Claim 11:

Chaudhuri discloses a relational database [col 1, lines 10-15]

Claim 20:

Chaudhuri discloses router, client cache, firewall and another server [Fig 1]

Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chaudhuri and Cochrane in view of US Pat No 5,325,525 issued to Shan et al (hereafter Shan).

Claims 4, 19:

The combination of Chaudhuri and Cochrane discloses the elements of claim 1 as noted above.

Furthermore, Chaudhuri discloses a list data structure [col 24, lines 35-45]

The combination of Chaudhuri fails to disclose hash data structure.

Shan discloses a hash data structure [col 9, lines 12-30]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chaudhuri and Cochrane to include hash data structure as taught by Shan.

The ordinarily skilled artisan would have been motivated to modify the combination of Chaudhuri and Cochrane per the above for the purpose of performing a random search [col 9, lines 12-30].

Claims 4-10, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chaudhuri and Cochrane in view of US Pat No 5,787,452 issued to McKenna (hereafter McKenna).

Claims 4, 19:

The combination of Chaudhuri and Cochrane discloses the elements of claim 1 as noted above.

The combination of Chaudhuri and Cochrane fails to disclose a trie data structure.

Art Unit: 2171

McKenna discloses a trie data structure [col 5, lines 17-37]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chaudhuri and Cochrane to include a trie data structure as taught by McKenna.

The ordinarily skilled artisan would have been motivated to modify the combination of Chaudhuri and Cochrane per the above for the purpose of storing a sparse data set [col 5, lines 24-30].

Claim 5:

The combination of Chaudhuri, Cochrane and McKenna discloses the elements of claims 1 and 4 as above.

Furthermore, McKenna discloses wherein the data object is a collector object that is associated with a member object that identifies one or more other data objects that are referenced in a sub-tree below a reference to the requested collector object in the Trie data structure, the member object being employed to reference and retrieve each other data object when the collector object is retrieved [col 5, lines 17-37].

Claim 6:

The combination of Chaudhuri, Cochrane and McKenna discloses the elements of claims 1, 4 and 5 as noted above.

McKenna discloses automatically enabling the member object to identify a new data object that is added to the sub-tree below the reference to the collector object [col 5, lines 30-35]

Claims 7-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chaudhuri, Cochrane, Shan and McKenna and further in view of US Pat No 6,175,835 issued to Shadmon (hereafter Shadmon).

Claims 7 and 16:

The combination of Chaudhuri, Cochrane, Shan and McKenna discloses the elements of claims 1 and 4 as noted above.

Art Unit: 2171

The combination of Chaudhuri, Cochrane, Shan and McKenna fails to disclose identifying a key in the request for the data object, dividing the key into segments and employing each segment to search the Trie data structure and locate the requested data object.

Shadmon discloses identifying a key in the request for the data object, dividing the key into segments and employing each segment to search the Trie data structure and locate the requested data object [abstract]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chaudhuri, Cochrane, Shan and McKenna to include identifying a key in the request for the data object, dividing the key into segments and employing each segment to search the Trie data structure and locate the requested data object.

The ordinarily skilled artisan would have been motivated to modify the combination of Chaudhuri, Cochrane, Shan and McKenna per the above for the purpose of searching a database comprising an unbalanced structure [abstract].

Claim 8:

The combination of Chaudhuri, Cochrane, Shan, McKenna and Shadmon discloses the elements of claims 1 and 4 as noted above.

Shadmon discloses an IP address [Fig 17A]

Claim 9:

The combination of Chaudhuri, Cochrane, Shan, McKenna and Shadmon discloses the elements of claims 1 and 4 as noted above.

Shadmon discloses wherein the key represents a port [abstract].

Venkatachary '184 discloses wherein the key represents a port [abstract].

Claim 10:

The combination of Chaudhuri, Cochrane, Shan, McKenna and Shadmon discloses the elements of claims 1 and 4 as noted above.

Art Unit: 2171

Examiner notes that in Shadmon wherein each segment is represented by at least one bit is inherent.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Chaudhuri and Cochrane in view of Pub No US 2002/0194167 issued to Bakalash et al (hereafter Bakalash '167).

Claim 13:

The combination of Chaudhuri and Cochrane discloses the elements of claims 1, 7 and 11 as noted above.

The combination of Chaudhuri and Cochrane fails to disclose the data store is a data warehouse.

Bakalash '167 discloses the data store is a data warehouse [abstract]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chaudhuri and Cochrane to include the data store is a data warehouse as taught by Bakalash '167.

The ordinarily skilled artisan would have been motivated to modify the combination of Chaudhuri and Cochrane per the above for the purpose of supporting on-line analytical processing operations to realize an improved informational database [abstract].

Response to Arguments

Applicant's arguments submitted 12/23/2003, with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US Pat 4,829,427 issued to Green discloses optimization based on the cost of alternate access methods.

Art Unit: 2171,

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

3/25/2004



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